CLAIMS

1. A transmission including at least one planetary gear set, the transmission comprising:

a first clutch pack having a plurality of first clutch plates;

a second clutch pack located in series axially with the first clutch pack, said second clutch pack having a plurality of second clutch plates;

wherein a clutch apply member associated with the second clutch protrudes through said first clutch plates of the first clutch pack; and

a substantially cylindrical seal member positioned between the first clutch pack and second clutch pack for preventing substantial flow of cooling fluid between the first and second clutch packs and to direct the cooling fluid through the second clutch pack when the second clutch pack is applied by the clutch apply member.

2. The transmission of claim 1, wherein said substantially cylindrical seal member has a ring portion with a radially inwardly protruding disk portion.

3. The transmission of claim 2, wherein said substantially cylindrical seal member is positioned radially outwardly from the clutch apply member, and said disk portion is positioned between the clutch apply member and the second clutch pack.

4. The transmission of claim 1, wherein said second clutch pack comprises a starting clutch.

5. The transmission of claim 2, wherein an end of said ring portion is positioned against a retaining ring for the first clutch pack.

6. The transmission of claim 1, wherein said seal member comprises steel.

7. The transmission of claim 1, wherein said clutch apply member is castellated.

8. A method of directing cooling fluid through a starting clutch pack arranged in series axially with a first clutch pack, wherein a clutch apply member extends through the first clutch pack for applying the starting clutch pack, and wherein there is a gap between the starting clutch pack and first clutch pack, the method comprising:

positioning a substantially cylindrical seal member in the gap between the first clutch pack and the starting clutch pack to prevent substantial flow of cooling fluid through the gap and to cause the cooling fluid to flow through the starting clutch pack for cooling when the starting clutch pack is applied by the clutch apply member.

9. The method of claim 8, wherein said positioning step further comprises positioning the seal member radially outwardly from the clutch apply member, with an end of the seal member positioned against a snap ring of the first clutch pack, and a radially inwardly protruding disk portion of the seal member being positioned to transfer force from the clutch apply member to the second clutch pack.

10. The method of claim 8, wherein said seal member comprises steel.

11. A transmission including at least one planetary gear set, the transmission comprising:

a first clutch pack having a plurality of first clutch plates;

a starting clutch pack located in series axially with the first clutch pack, said starting clutch pack having a plurality of starting clutch plates;

wherein a clutch apply member associated with the starting clutch pack protrudes through said first clutch plates of the first clutch pack;

a substantially cylindrical seal member positioned between the first clutch pack and the starting clutch pack for preventing substantial flow of cooling fluid between the first clutch pack and the starting clutch pack and to direct the cooling fluid through the starting clutch pack when the starting clutch pack is applied by the clutch apply member; and

wherein said substantially cylindrical seal member has a ring portion with a radially inwardly protruding disk portion, and the ring portion is positioned radially outwardly from the clutch apply member, and the disk portion is positioned between the clutch apply member and the starting clutch pack.